notice has been to supply references to the best figures that have been published of the fossils of the British Isles, including, if possible, the earliest illustrations; so that all the "types" may readily be found. Occasionally more latitude has been allowed, and the references to the figures and descriptions indicate everything that has been published on the respective species. In all cases, monographs that embrace the bibliographical history of the several forms are carefully adverted to.

Hence this work is eminently useful to the geologist and palæontologist; for it assists them in the strict determination of the species peculiar to each formation; and they are hereby enabled without loss of time to prove the full value of their observations and collections, to draw up lists of the fossils of their respective neighbourhoods, compare the fossil products of various localities, and advance the knowledge of both practical and theoretical geology in the British Isles.

And not only in our own country, but in Europe, America, India, Australia,—wherever geology is studied, this work will be found of essential service. For although all the references to foreign works are not given (English publications having generally the preference), and though the foreign localities of species not peculiar to the British Isles are not always mentioned,—yet, in common with geologists at home, our foreign brethren in the science will find Mr. Morris's unpretending work a rich mine of palæontological knowledge, ever ready to yield information to the student in his researches in bibliography, or in his examination into natural-history affinities.

That foreign naturalists fully appreciated the value of the 'Catalogue' in its first edition, the "European reputation" which the author earned by its production is sufficient evidence; and the general 'Index' by Bronn and his colleagues, and some of the valuable Catalogues by D'Orbigny, Giebel, Geinitz, and others, whether general or local in their characters, have avowedly had "Morris's Catalogue" for their example.

The general catalogues above referred to are highly valuable, and are indeed often indispensable to the student,—for they afford synopses of all the known fossil forms of animal and vegetable life, and of their distribution in the geologic series (as far as the accounts of the very numerous observers can be reduced to an orderly arrangement); and moreover the German authors have laboured to supply every bibliographic reference, of whatever value, for each species; yet the great desideratum of strict specific determination, combined with an exact indication of stratigraphical and geographical locality, is only supplied in such a work as that before us.

Prof. J. Phillips has well observed that "the most important results to geology, arising from the contemplation of organic remains, are founded on a minute scrutiny of their specific characters, and a careful register of their localities in the strata. It is not enough for the rigid accuracy of modern inquiry, to say that a given rock contains corals, shells, and bones of fishes; but we must know the particular species, and determine all the circumstances of their occur-

rence. The more exact and extended our researches on this subject become, the more clear will be our statements on the succession of created beings, the more certain our applications of zoological principles to determine the relative antiquity of rocks, and the more satisfactory our views of the formation of the strata."

In recommending this new and enlarged edition of Mr. Morris's 'Catalogue' to the careful study of the geologist and the natural-history student, we must express our hope that the Author will edit at frequent intervals, supplemental notices of the new species as they accumulate, as well as a set of synoptical lists and tables compiled from the present work, exhibiting at a glance the stratigraphical distribution of the families, genera, and species of fossils found in Great Britain and Ireland. This, though seemingly but a clerkly task, will require the careful supervision of a master.

Popular Conchology. By Agnes Catlow. Second Edition. London: Longmans, 1854. 12mo.

In this little book, of which a second edition is now before us, Miss Catlow has brought together, in a popular form, the characters of the genera of Mollusca; and although the work is, of course, almost entirely a compilation, the fair author appears to have exercised considerable judgment in the selection of materials, and her book, we should think, will prove exceedingly useful to the younger students of this branch of zoology.

The system adopted in the present edition is derived from that given by Philippi in his 'Handbuch,' founded upon the structure of the molluscous animals. In the first edition, Lamarck's shell system was followed. The generic characters are generally copied from the works of other authors; and, in most cases, the number of species included in each genus is given from the most recent authorities. Most of the genera are illustrated with very good woodcuts of the shells, which will greatly facilitate the work of the young conchologist in the arrangement of his collection.

There are some things, especially in the introductory chapter on the structure of the Mollusca in general, which might have been improved with very little additional trouble, but which would have rendered the book far more satisfactory. As an instance, we may refer to the very curious account given by our author of the mode of formation of shell. She tells us that from the mantle "a liquid exudes, which, on exposure to air or water, hardens into shell,"—an explanation of the phænomenon which we fear will hardly prove satisfactory to an inquiring mind. On the whole, however, Miss Catlow has produced a book which will no doubt be highly acceptable to a very large class of readers.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

December 14, 1852.—Dr. Gray, F.R.S., V.P., in the Chair.

On the Painted Pig of the Camaroons (Potamochœrus penicillatus).

By John Edward Gray, Ph.D., F.R.S., V.P.Z.S. etc.

This Pig was imported into Liverpool, where it remained some time, being regarded as the common Cape "Bosch Vark." It was at length purchased by the Society, and is one of the most interesting additions made during the course of the present year to the very numerous series of animals now in the Gardens.

It differs in colour and proportions from the Cape "Bosch Vark," but like it belongs to a very distinct group of Pigs from those found in Europe and Asia, and from the *Babyrussa* of the Malay Islands.

In the 'Annals and Magazine of Natural History' for October 1852, I gave a short account of this animal, and formed a genus for this group of African Pigs, to which I gave the name of *Choiropotamus*, describing the present species by the name of *C. pictus*, and it is figured under this name in the 'Illustrated London News.' Since these notices were published, I have found that it will be necessary to change both these names; the first because there is a genus of fossil animals described by Cuvier, which has been called *Cheiropotamus*. I therefore propose to reverse the words and call the genus *Potamochœrus*. The specific name is changed because the pig appears to have been described in 1848 from a specimen in the Museum of the town of Basle in Switzerland, in a work which has not yet reached this country, but a short abstract of the description has been copied into a French Journal.

The group of *Pigs* (Sus, *Cuvier*) may be divided into three very well-marked genera, distinguished by their external appearance, peculiarities in the skull, and by their geographical distribution, thus:—

Genus 1. Sus.

The ears rounded; tail slender; face conical, simple, or with a small wart on each cheek; the hinder upper part of the intermaxillary bones simple; the upper canines coming out on the lower edge of the maxilla and then recurved. Found wild in Europe and Asia, but domesticated in all parts of the world.

This genus contains several species, and almost the whole of them are found wild in the forest, whilst some of their descendants are generally to be met with in a domesticated or semi-domesticated state. This is the case with the Pigs found in the islands of the Indian Archipelago, which have been regarded as distinct species.

I may state that it is exceedingly difficult to distinguish the species of this genus, especially from the examination and comparison of the skull. I have examined with care ten skulls of what I believe to be the European Wild Boar and its offspring, grown in this country, at the Cape of Good Hope, and at the Gambia, and twelve skulls of the

Wild Boar from Continental India, and though they offer considerable variation, I cannot discover any constant easily-described character by which I can distinguish the European and the Indian kinds from each other, and this is the case with many other genera allied to the Pigs. We have in the Zoological Gardens the Wild Boar of Europe and a Wild Boar and Sow from Madras living side by side, and they have all the appearance of being most distinct species, which may be thus characterized :—

Sus aper.

Covered with crowded bristles, forming a crest on the withers; black speckled, with grey tips to the bristles; the legs hairy, black; hoofs black.

Hab. Europe, Germany.

Sus Indicus.

Covered with scattered, more rigid bristles, more abundant on the front part of the body; pale grey, blackish on the outside of the shoulders; legs slender, covered with a few bristles; hoofs white.

Female (perhaps half-bred).—Body rather more hairy; the outer front hoof of each hind foot black.

Sus Indicus, Gray, Cat. Mam. B.M.

Hab. India, Madras.

The skulls of the Wild Hogs from Madras and the Himalaya in the British Museum all appear larger, and have the hinder part of the forehead not so high and dilated as in the common Domestic Boar, much resembling the skull of the sows of that species. They can scarcely be all from female animals of the Indian kind.

I may observe that the nasal bones of this genus appear to elongate and occupy a greater part of the length of the face in the adult than in the young animal. In the young they seldom extend beyond a line even with the large foramen on the side of the face, but in the adult they are generally produced much behind it.

Genus 2. Babyrussa.

The ears rounded; tail and limbs slender; face conical, simple; the hinder upper part of the intermaxillary bone smooth; the upper canines (in both sexes) coming out from the side of the jaw and bent upwards from the base, and then arched backwards, sometimes even spirally recurved. *Hab.* The Indian islands.

1. Babyrussa alfurus.

Genus 3. Potamochœrus.

The ears elongate, suddenly tapering and ending in a pencil of hairs; face elongate, with a long protuberance on each side halfway between the nose and the eye; the tail thick, high up the rump; the upper part of the intermaxillary bone swollen, rugose; the upper canines arising from a prominent bony case on the side of the jaws, coming out on the lower edge of the jaw and then recurved. *Hab.* Africa.

Koiropotamus, Gray, Cat. Mam. B.M. xxvii.

Choiropotamus, Gray, Ann. & Mag. N. H. 1852 (not *Cheiropotamus*, Cuvier, Oss. Foss.).

1. Potamochœrus Africanus.

Black; cheeks whitish, with a large central black spot.

African Wild Boar, Daniel, African Scenery, t. 22 ♂.

Sus africanus, Schreb. Säugth. t. 327, head.

Sus larvatus, F. Cuvier, Mém. Mus. viii. 447. t. 22. Blainv. Osteog. xxii. t. 5 *f.* t. 8 *f.*

Choiropotamus africanus, Gray, List Mam. B.M. 185.

Choiropotamus larvatus, Gray, Ann. & Mag. N. H. 1852.

Sus koiropotamus, Des Moul. Dict. Class. H. N. Atlas, t. 7 ♀.

All the specimens which have come under my notice are coloured as above described. But Dr. Andrew Smith (Zool. South Africa) observes, scarcely any two specimens are of the same colour; some are brownish black, variegated with white, and others almost entirely uniform light reddish brown.

2. Potamochœrus penicillatus.

Bright red bay; face, forehead, ears and a large spot on the front of the legs black; edge of the ears, whiskers, streaks over and under the eye, and a continued sub-crested streak along the middle of the back white; hair of the back short (black at the base), of the sides and whiskers elongate; tail very long, thick.

Sus penicillatus, Schinz, Monog. Säugth. 1848, fide Rev. Zool. 1848, 152.*

Choiropotamus pictus, Gray, Ann. & Mag. N. H. 1852.

Painted Pig of the Camaroons, Illustrated News, 1852.

Hab. W. Africa. River Camaroon. "Gold Coast, Mus. Basle," fide *Schinz*.

A fine male of this species has been living in the Gardens of the Zoological Society since September 1852.

On the Horns of the Sanga, or Galla Oxen, of Gibba. By J. E. Gray, Ph.D., F.R.S., V.P.Z.S.

Dr. Gray brought before the Society a pair of horns of these oxen, which the British Museum had lately purchased at the sale of the property of the late Earl of Mountnorris, at Arley Hall.

They are the pair mentioned by Mr. Salt in his 'Voyage to Abyssinia,' at p. 258, 4to edit. 1814, where he observes:

"There (Gibba) for the first time I was gratified by the sight of the *Galla* Oxen, or *Sanga*, celebrated throughout Abyssinia for the remarkable size of their horns. Three of these animals were grazing among the other cattle in perfect health, which circumstance, together with the testimony of the natives, 'that the size of the horn is in no instance occasioned by disease,' completely refutes the fanciful theory given by Mr. Bruce respecting this creature.

* I have seen the specimen in the Basle Museum, and it is certainly the species here described, only differing a little in the depth of the colouring.—J. E. G.